

## Authors:

Paniz BARADARAN (POLITO), s2896352@studenti.polito.it

Wiktoria OZIMEK (ULODZ), ul0233679@edu.uni.lodz.pl

Belal NEAZI (POLITO), s288611@studenti.polito.it

Turna BAL (UMERSIN), balturna8@gmail.com

Hanne Sun LYSSBAKKEN (HINN), 233618@stud.inn.no

Emanuel Taborda Dionísio BATISTA (IPLEIRIA), 4210225@my.ipleiria.pt

# The Road Not Taken. Making Baleal more sustainable

## Case Study Analysis and Policy Recommendations

### Abstract

The case study area is Baleal beach. There are two sides to the new plan developed for the area as some stakeholders are happy while some are not. Here, traffic is a major issue as it creates a problem for the lives of the locals and the tourists. This problem is in return hampering the environment. Usually, people say that if I do something small for the environment then it would not do anything positive for the environment protection but if many municipalities start working towards the climate protection, then maybe we may achieve the environmental protection goals. Small steps to environmental protection will lead to bigger and positive effects.

We carried out tasks like the case study analysis of Baleal, discussion with stakeholders and stakeholders' analysis, SWOT analysis and finally policy recommendations. We have focused on problems of the use of petroleum vehicles, traffic congestion, and damages due to nature and connectivity. In the solutions, we have tried to solve these problems. While for policy recommendations we want to work on the new and existing roads and utilize them for special purposes be it for touristic or local people's use. Also, we focused on the importance of public transport and green transport like e-buses and electric scooters. The problem will be the funds.

Though these funds can be taken from number of sources but it needs a push from the municipality. If the process is started, then it will attract many investors as Baleal has a lot of scope for becoming an important touristic hub. Also, we want if similar techniques can be used in various other places with some changes according to the local conditions as it can have a huge effect on the betterment of the environment which is our ultimate goal.

Keywords: Baleal Beach, Traffic, Sustainable Tourism Destination, Climate Change, SWOT Analysis, Policy Recommendations, Sustainability

## Theoretical and methodological framework

### Aim of the report

To make Baleal Beach more sustainable, green and to reduce traffic congestion. Also, to make the people's and the tourist's lives better. Finally, to help in environmental protection.

### Literature review

According to Jorge et al. (2022), tourism and climate change has effects on coastal systems. They further argued that since the 1970s, tourism has tremendously grown and is now one of the biggest global economic areas. Due to contributing to both local and national economies. The environment has been categorized in three risk categories: natural, technological and social risk (Jorge et al., 2022). Why the concept of risk is so important is because the term has a connection to uncertainty. However, the concept does not exist if nothing valuable is present. But the possibility to lose can relate to risk and also have several dimensions. Therefore, the location in this assignment links to coastal regions, because the project can help to explore new possibilities, but at the same time can preserve what already exists in the Peniche-Baleal area. As Jorge et al., argued that due to concern over the evidence that coastal regions have a way of life that favours populace attentiveness, inspires the economy, profitable relative plus service facility (Jorge et al., 2022). Shenar and Dvir (2007) mention that every process started as a project that was put into motion. I.e. that each project expects to bring value for every part of those involved in the project (Martinsuo and Killen, 2014, stated in Eskerod et al., 2017).

According to Yoopetch and Nimsai (2019), it is important to explain the phenomenon of tourism to understand sustainability policies, because of their connection to each other. Another reason is that tourism is an anthropogenic interest and therefore has inherent appearances and produces durable impacts on the environment. Since it is obsolete as the natural and also cultural resources that allow growth, it is no longer interpreted as infinite. They further claimed that tourism development issues have a unique side from other economic sections. However, on the contrary require protection and enhancement policies capable of guaranteeing over time the integrity and attractiveness of the various tourism destinations (Yoopetch & Nimsai, 2019).

One of main key in this assignment is therefore be sustainable development concept, the phenomenon has existed for a long time, but the concept got massive focus when Brundtland commission came out with "our common future" and the concept will in this task be described as: "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (United Nations, 1987). And will have an affiliation with sustainable tourism. According to the United Nations (1987), sustainable tourism is applied in tourist areas, where activities are developed for an unlimited time and which manage to maintain, without damaging the environment, the social and cultural pillar and the economic development of the resident populations. While Shipp and Kreisel (2001) claim that sustainable tourism is defined as a way of planning and developing any type of tourist activity that respects and preserves natural, cultural and social resources and makes a positive contribution to the economic development of the local population (Shipp & Kreisel, 2001).

If humans have ambition to conserve the worth of the tourist capability and at the same time resolving economic, social, and environmental characteristics. Butler (2008) claimed that it is required by two different sides, on the one hand the well-being of local inhabitants on the other hand sustainable tourism (Butler, 2008).

## Methods

The main method which was used during the research was case study analysis. With this tool we tried to understand the main issue in that area and how can we solve it. The problem will be different for different areas in the world. We cannot copy solutions, but we can use some good solutions used elsewhere and adapt them according to the particular place.

We started with the “stakeholder analysis” which is an important method while decision making for new solutions in the country. This tool can be used to collect information about people in a specific area. Because of stakeholder analysis, we can understand their behaviours, intentions, relations and the influence which they can bring to the project. This analysis can make projects more effective (Brugha & Varvasovszky, 2000).

Then we used the SWOT analysis. This is a method which expands our knowledge about the problem and in effect, it can help to find the best solution (Tylińska, 2005). One of the most important methods is formulating policy recommendations which are written for people who can have a significant influence on policy decisions. It can inform people, especially the government about the research and evidence which can help to improve the solution. It shows an extra positive influence which can relate to the solutions.

## Case study analysis

### Case study area

According to the National statistics institute, Baleal beach is in the west sub-region, area of 77.55 km<sup>2</sup> and 4 existing parishes: Peniche, Ferrel, Atouguia da Baleia and Serra d'el Rei located in the country of Portugal (Jorge et al., 2022). Further, they claim that the number of citizens in Peniche is around 27,753 and consistent with people concentration of 357.9 citizens per km<sup>2</sup>. (Male 48.4% and female 51.65%). Plus, with roughly 10,971 families living in 21,222 houses, the elderly has increased from 104.8 in 2001 to 160.2 in 2021. However, the fraction of the local foreign populace is 6.7% in 2021 associated with 3.1% in 2010 (Jorge et al., 2022).

The ordinary capitals are based on one hand what occurred historically, on the other hand, are based on the traditionally established development of the ordinary capitals. Peniche is known for fishing activities, and industries linked to main harvests, particularly to fish and cultivated accomplishments (Jorge et al., 2022). The Borough of Peniche was successively conquered through citizens who made probing plus agriculture their important financial activities. Peniche also has been shaped and acclimatized after socioeconomic plus cultural matter understanding. Municipality of Peniche preserved important historical events of both national and international nature (Jorge et al., 2022). Figure 1 illustrates coastal siltation in the Peniche region. Over the following years, environmental changes could have a drastic effect on Peniche.

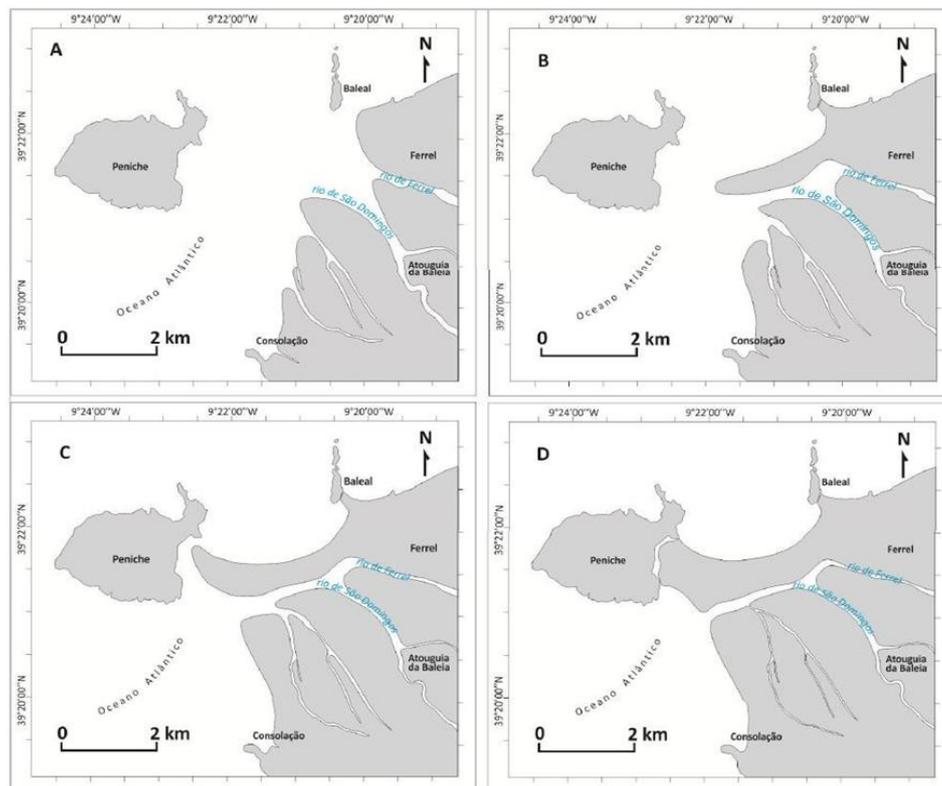


Figure 1: Coastal siltation in the Peniche region.

Source: Jorge et al. (2022: 22)

Jorge et al. (2022) claimed that the municipal area can be separated into two head components and is dominated by many other things. The change has been progressing very fast, frequently exclusive of vague control ensured by preceding preparation. The occupation of the older island of Baleal has not remained an issue to such robust structure compression, certain the legitimate, geographical, and environmental boundaries.

There are several challenges but an important aspect here is the dune system of the Peniche Baleal Bay. As Jorge et al. (2022) claimed that Natura 2000 network is a European ecological network and includes bird's directive, habitats directive and purposes to contribute to safeguarding biodiversity across maintenance of natural surroundings than of wildlife and vegetation in the European ground (Jorge et al., 2022).

Portugal is one of the leading European surf destinations with 38,3% of the market. Peniche has surfers that have an existence and an association amongst the sea that is both natural and inherited. Peniche is also patronized equivalently by locals and newcomers' surfers that are affected by a very explicit routine that essential specific sustenance infrastructure (Baleal Surf Camp).

A change in the long-term weather patterns that characterize the world's regions is referred to as global climate change. The earth is warming, scientists confidently state. This trend cannot be explained exclusively by natural climate variability. The following results were obtained using climate data extracted from the Copernicus website and based on three main climate elements (see Figure 2). The three main climate elements that were derived were precipitation, wind speed, and temperature. The data is considered valuable for case scenarios and German climate data analysis until 2100.

The average monthly precipitation will be up to 88 mm, with a 2.1 to 2.5-degree rise in temperature at the Baleal beach. The average wind speed will be 7.3 meters per second by the year 2100, and the speed will increase to 0.07 meters per second.

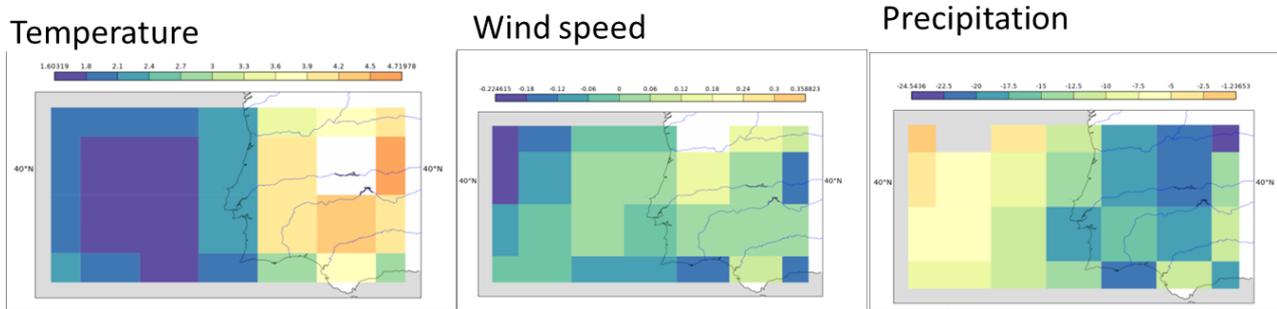


Figure 2: Climate of Baleal Beach.

Source: <https://cds.climate.copernicus.eu/>.

The climate change, data, and climate change international agreement has been published and revised recently. One of that is deeply working on CO2 and economic part is the circular economy and the United Nations’ Sustainable Development Goals (SDGs) urban agenda. A circular economy action plan has been proposed by the European Union with a vision based on a closed-loop life cycle of material and reducing the usage of natural resources. Mitigation and Adaptation Strategies for Global Change is a platform for discussing, analysing, and encouraging the development, and implementation at regional, and national levels, including the SDGs.



Figure 3: Baleal Beach problem.

Source: own elaboration.

Many issues were found (see Figure 3), and we narrowed to down to a few which have been prioritized based on the climatic analysis extracted from scientific data, site discussion with stakeholders, and the project's main objective. Since this project is committed to bringing sustainability to Baleal beach, the problems are narrowed down to greenhouse gas (GHG) emissions by considering the root cause of climate change and its environmental impacts. The base producer of emissions is the old transportation system, non-renewable sources of energy, and traffic caused by personal vehicles. The main producers of GHG emissions have been distinguished as unsustainable vehicles, no use of bikes and their paths and existing high traffic throughout the peak season.

### Stakeholder analysis

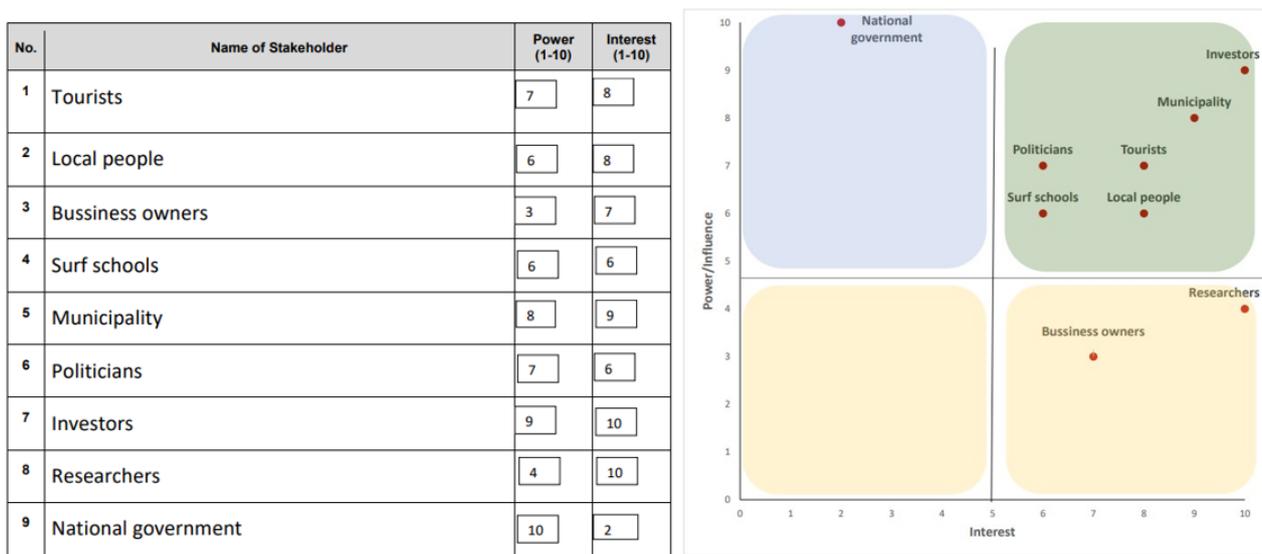


Figure 4: Stakeholder analysis.

Source: own elaboration.

Tourists are occasionally in Peniche, in Baleal Beach. This destination is the most popular during summer. They have a high level of power because local people and the government in Peniche can earn money because of them. Tourists have a high level of interest too because it is important to them to have many more facilities during their holidays. Local people have a medium index of power because the Portuguese government tries to promote participation, but people think that these ideas are not important to the government. Because of that, local people feel excluded.

Business owners are the people of the food and beverage industry and shops like grocery stores, etc. They have got a higher interest in the development of the Baleal area as it will increase the flow of tourists which in return will help in making their business more profitable. Surf Schools are companies that teach people to surf. They have some interest in the development of the area as their works are already flourishing. Surf Schools have more power over business owners as they are the main reasons which bring in new surfers though the difference in power is not much.

A municipality comprises people who are elected by the local citizens. They have one of the highest powers and to come back again in power they have a higher interest as well. While the politicians who we have

considered here are the opposition party people. They have power as they can protest and disrupt the work while they have interest too as they need to win over the people so that they support them during the next elections. National Government has the most power but not much interest because they are more interested in developing other regions (rather than Baleal). Investors are the people who will be developing the area and building new buildings for shops, bars, hotels, facilities for transport, etc. Researchers are scholars from different fields of knowledge who try to protect the environment, e.g., environmental planners, historians, etc. Both have the highest interest in the area. Researchers do not have much power while investors have more power as they can influence the government in whatever ways they can.

## SWOT analysis

The study area's most remarkable strengths are its beautiful landscape, surfing opportunities, and tourism attractions. While attracting tourism and implementing a ticketing and taxation system could be positive internal factors. On the other hand, a lack of funding for green infrastructure and the use of environmentally-friendly vehicles is seen as a weakness. Another disadvantage is due to private cars which need parking spaces and using nature as a parking plot will result in environmental degradation. The management of various pollution generated by cars and tourism, such as waste, noise pollution, and water pollution, is going to be a struggle for local authorities.

<b>S</b>	<b>W</b>	<b>O</b>	<b>T</b>
<p><b>Environment</b></p> <ul style="list-style-type: none"> <li>Beautiful landscape of the area, panoramic view (beautiful beaches and opportunity to have the waves)</li> <li>Opportunity to welcome surfers in the whole year</li> <li>Access to the other island is provided</li> <li>Existing bike path along the beach</li> </ul> <p><b>Economy</b></p> <ul style="list-style-type: none"> <li>Tourists pay rent, taxes, tickets for transport. This will make the municipality earn money which can be used for the betterment of the area and the people.</li> </ul> <p><b>Social</b></p> <ul style="list-style-type: none"> <li>Surf school create more job opportunities.</li> <li>Traditional fishing</li> <li>Qualified and well-trained surfer instructors</li> <li>Kids are well informed about the environmental impact</li> </ul>	<p><b>Environment</b></p> <ul style="list-style-type: none"> <li>Nature and sand dunes are not preserved well.</li> <li>Air pollution because of the traffic</li> <li>Noise pollution due to the traffic creates problems for local people.</li> <li>Water pollution is caused by ferries.</li> <li>No written environmental action plan</li> <li>Lack of information about the environmental impact on adults</li> <li>Lack of research on pollutants caused by the surfers</li> </ul> <p><b>Economy</b></p> <ul style="list-style-type: none"> <li>Lack of budget to support green transportation</li> <li>Lack of sustainable transportation or green transportation</li> <li>Investors have the economic power to establish their idea</li> </ul> <p><b>Social</b></p> <ul style="list-style-type: none"> <li>Traffic on the roads, especially in the peak season.</li> <li>Lack of parking spaces</li> <li>Safety on the beach</li> <li>Tourism management in peak season could be difficult</li> <li>Lack of tourism services in summer cause overpopulated atmosphere and more extortion on environment</li> <li>Revision of the City plan is happening every 10 years, and this is a long term to revise</li> </ul>	<p><b>Environment</b></p> <ul style="list-style-type: none"> <li>European union committees' legislation on preserving land and environment( circular economy action )</li> <li>International agreement preservation that is mentioned in city plan</li> </ul> <p><b>Economy</b></p> <ul style="list-style-type: none"> <li>Investors can bring money to apply green infrastructure and establish good relationships with local communities</li> </ul> <p><b>Social</b></p> <ul style="list-style-type: none"> <li>High number of tourists</li> <li>Social media can bring tourism into the area</li> <li>Regular competitions like surf competition</li> </ul>	<p><b>Environment</b></p> <ul style="list-style-type: none"> <li>Climate change and its consequences ( landslides, soil erosion, Sea level rise for about 1 meter in future )</li> <li>Old city plan</li> <li>new government plan to control</li> <li>new transportation construction will destroy the local nature</li> <li>Fishing companies are producing pollutants and may influence the co2 emission</li> <li>Unplanned construction</li> <li>Since this area is not part of the UNESCO plan, its easier for the investors to influence the illegal construction which may be a problem for the environment.</li> <li>Surfers are not very well informed about the pollutant they left in the site</li> <li>There is no strong restrict legislation on environmental hazards Baleal facing and sustainable transportation solution</li> </ul> <p><b>Economy</b></p> <ul style="list-style-type: none"> <li>Pandemic</li> <li>Economical impact and recession</li> </ul> <p><b>Social</b></p> <ul style="list-style-type: none"> <li>Uncertainty over future government</li> </ul>

Figure 5: SWOT analysis.

Source: own elaboration.

In this case study analysis, the numerous international agreements to reduce CO2 emissions are considered opportunities. When it comes to sustainability, investors could provide the funds required to build green infrastructure and advance sustainability. The power of social media in this scenario is a plus and provides a strong opportunity to attract stockholders.

Environmental impact and climate change are the most major threats on the site, according to the study's objective. Without considering sustainability and inadequate environmental legislation, the government's new plan will encounter significant climate hazards.

## Policy recommendations

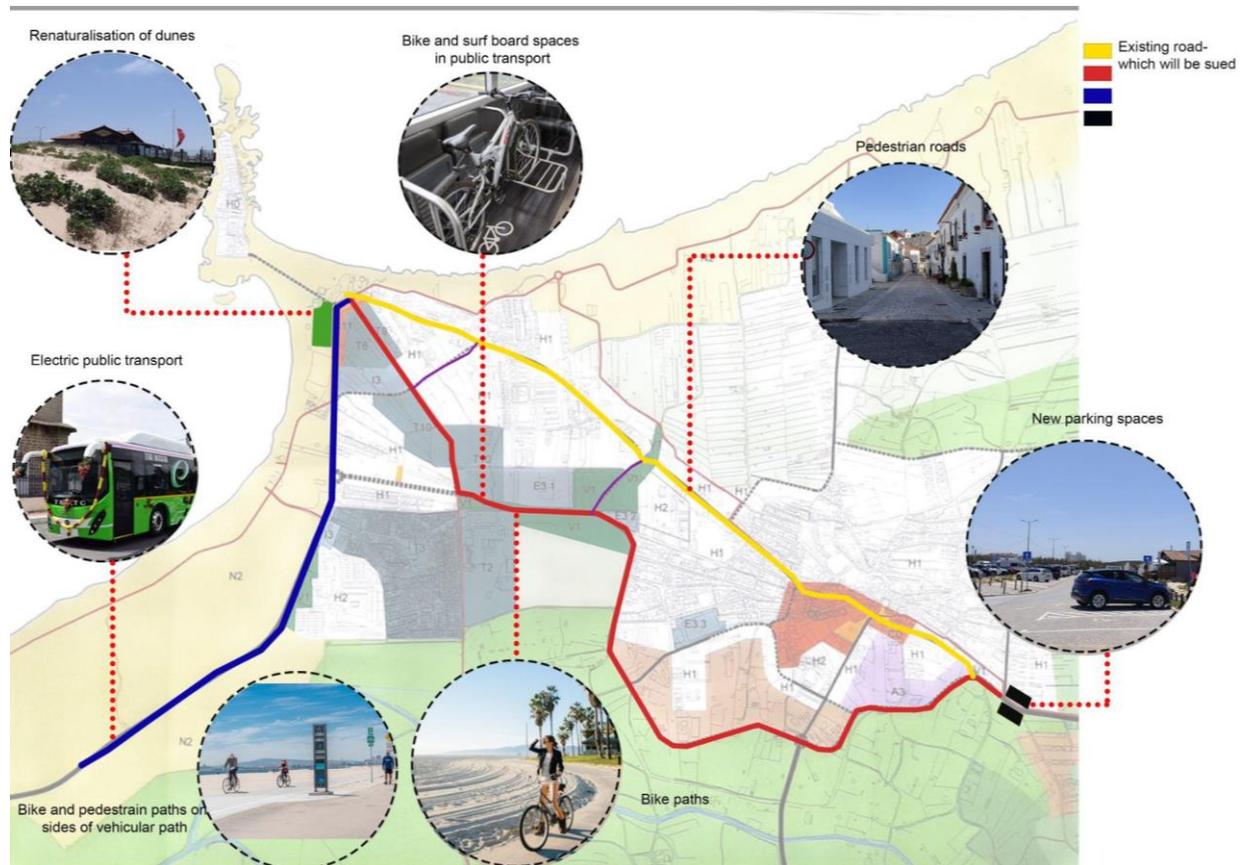


Figure 6: Solutions for Baleal Beach.

Source: own elaboration.

After analysing the problems and going through the analysis in the form of stakeholders and SWOT we have come up with some solutions which are as follows:

- Stopping private vehicular traffic outside the town and focus on electric and public transport on the new road. This will reduce the traffic problem inside the town and in term help in the betterment of both the tourists and the local citizens. This also links to SDG 11 which is “Make cities and human settlements inclusive, safe, resilient and sustainable”.
- The existing road which passes through the centre of the town should be used only by town people (only on foot). During the offseason, it can be used for promoting tourism in the town. Example- by selling the arts and crafts of the towns to the tourists.
- Increase in intensity of buses between Baleal and Peniche. At the current moment, it's hard to go from two nearby beaches by public transport. These buses will make the lives of the people easier.

- Use of electric buses and other electric vehicles like scooters, carts, etc. The buses may have spaces for surfs so that surfers can use them freely. Sometimes surfers do not use public transport as it does not have spaces for the boards. If they get these buses, then they will use them.
- Tickets on buses and tourist tax on hotel accommodation so that the municipality can earn and help in-town development. These taxes will be an extra income for the town.
- Segregation and proper waste disposal. The waste is scattered on beaches during peak season and the tourists do not know the importance of waste segregation, this needs to be made better, which can be made better as the municipality will earn money from fines and taxes imposed.

The solutions which we have proposed (see Figure 6) are directly or indirectly affected by the betterment of the environment. Maybe if we cannot do something about climate change now, our small steps will help in adding up to the steps which are taken by various places all around the world.

Just like ‘Single drops of water fills the bucket’, similarly our small changes will add up and help in the betterment of the environment. And if Baleal is considered as a prototype project, the results seen here can be utilized elsewhere around the world in similar spaces.

Our recommendation as explained above will help to reduce traffic in Peniche, which is the cause of over-tourism during the peak season. We will utilize the solution on the roads in the site area. This solution can have a positive influence on different fields. For example, when we reduce the traffic in the city we will reduce the emission of CO<sub>2</sub> too, so it will have a positive influence on the environment. It can improve the quality of air. The smaller intensity of cars in the centre can reduce noise, which can be burdensome for local people, so it can raise their quality of life.

Government can have a lot of benefits from this solution, too. People will spend money on tickets for public transport and it will be a huge profit for authorities. It can have positive consequences for surfers, which is a large group in Peniche. Baleal Beach is a popular spot for them, because of the variety of coastline, there are waves suitable for all levels of surfers and people of every age. The new transport system will be a convenience for surfers, too. They can get through fast from any part of the city to Baleal Beach. Furthermore, they will not worry about parking.

Researchers will be satisfied with our solution because it will be a huge step to protect the environment near Baleal Beach. Our idea can attract investors, which can make the city a new infrastructure for transport. The new system of public transport can be the first step to making Portugal more ecological.

To make it possible we need human resources like security, drivers, ticket controllers, cleaners, maintenance workers, etc., funds, and knowledge which can be both scientific and indigenous. Also, the funds can be taken from municipal resources, European Union, the national government, private investors, in the future from the ticket sales. Private investors can come as they would feel that there is a good return here. A temporary solution can be made within one year so that locals can earn more money and their lives could be easier in the next season. A permanent solution can be achieved within 3 years.

## References

- Brugh, R., Varvasovszky, Z. (2000), Stakeholder analysis: review. *Health Policy and Planning*, 15 (3), 239-246.

- Butler, R. (2008). The Tourism Area Life Cycle in the Twenty-First Century. In: Lew, A. A., Hall, C. M., & Williams, A. M. (eds), *A companion to tourism*, p. 159-169.
- Jorge, J. P., Oliveira, V., Santos, L. L., Viana, A. S. & Malheiros, C. 2022. Climate change, coastal tourism, and local planning: the case of Baleal Beach, Peniche (Portugal)
- Shipp, D., Kreisel, B. (2001). *Loving them to death? Sustainable tourism in Europe's nature and national parks*. Grafenau: EUROPARC Federation.
- Tylińska, R. (2006). *Analiza SWOT instrumentem w planowaniu rozwoju*. WSiP Wydawnictwa Szkolne i Pedagogiczne.
- Yoopecth, C., & Nimsai, S. (2019). Science mapping the knowledge base on sustainable tourism development, 1990–2018. *Sustainability*, 11(13), 3631. <https://doi.org/10.3390/su11133631>
- United Nations. (1987). Report of the World Commission on Environment and Development 'Our common future' (A/42/427). <https://digitallibrary.un.org/record/139811>